EXHIBIT J

TIMOTHY J. SULLIVAN

EDUCATION

- Ph.D. Biological Sciences/Environmental Chemistry, Oregon State University 1983
- M.A. Biological Sciences, Western State College of Colorado 1977
- B.A. History, Stonehill College 1972

CURRENT POSITION

President, E&S Environmental Chemistry, Inc. Dr. Sullivan co-founded this scientific research and consulting corporation in September, 1988.

President, E&S Environmental Restoration, Inc. Dr. Sullivan founded this environmental restoration corporation in June, 1996.

EXPERIENCE

Dr. Sullivan is President and Principal Scientist of E&S Environmental Chemistry, Inc. He has over 25 years of professional experience, including 12 years of environmental project management experience. His expertise includes the effects of air pollution on aquatic and terrestrial resources; watershed analysis; nitrogen cycling; aquatic acid/base chemistry; mobilization, speciation and toxicity of metals in acidic waters; episodic processes controlling surface water chemistry; and environmental assessment. He is author of the National Acid Precipitation Assessment Program (NAPAP) State of Science and Technology Report on past changes in surface water acid/base chemistry throughout the United States from acid deposition. In recent years, he has also been principal investigator for a comparison between paleolimnological reconstructions of lakewater acid/base chemistry and processbased model reconstructions (U.S. Department of Energy), incorporation of an organic acid submodel into the watershed model MAGIC and testing of the revised model using data from ecosystem manipulation experiments in Norway and the U.S. (U.S. Department of Energy), investigation of the role of land use and landscape in the acidification of surface waters (U.S. Department of Energy), an analysis of the feasibility of adopting standards for deposition of nitrogen and sulfur (U.S. EPA), and a variety of nonpoint source pollution studies in forest/agricultural watersheds. His research and project management experience includes the following:

- Served as Co-PI of Diatom Paleolimnology Data Cooperative, 1993-present, housed at the Academy of Natural Sciences in Philadelphia and funded by NOAA and NSF. This data cooperative disseminates lake sediment core paleolimnological data focused on past climate reconstructions to the climate modeling and research community (http://diatom.acnatsci.org/dpdc/).
- Served as project manager for preparation of an Air Quality Review for Class I national parks throughout California. Also co-authored similar reviews for the Pacific Northwest and the Rocky Mountain and Great Plains regions of the National Park Service.
- Coordinated and analyzed available data bases throughout the United States, and internationally, providing evidence regarding the extent and magnitude of surface

- water acidification. Summarized and synthesized pertinent data and authored the State of Science and Technology Report for the National Acid Precipitation Assessment Program (NAPAP) on historical acidification.
- Served as project manager for a modeling project to assess aquatic and terrestrial effects of air pollutants throughout the southern Appalachian Mountains for the Southern Appalachian Mountain Initiative (SAMI).
- Served as lead author and individual responsible for synthesis and integration for report to the National Park Service on the sensitivity of natural resources in Shenandoah National Park to air pollution degradation.
- Coordinated research efforts of a team of experts in the fields of surface water
 chemistry, mathematical modeling, and paleoecology for the purpose of comparing
 paleoecological inferences and process-based model hindcasts of Adirondack
 Mountain lakewater chemistry. This project constitutes the most comprehensive, and
 only statistically-based, model validation exercise conducted to date for an acid-base
 chemistry watershed model. Supervised data analyses and interpretation, and served
 as lead author for final agency report.
- Directed field research project for the Alaska Department of Environmental
 Conservation on the Kenai Peninsula to investigate forest effects from industrial
 emissions of nitrogen. Coordinated and supervised all logistics and field sampling
 activities, including aerial infrared photography, measurements of forest growth and
 health, and collection of soil solution, conifer needles, precipitation, and throughfall.
 Directed data base construction, QA, data analyses, and interpretation; served as lead
 author on final report.
- Served as member of NAPAP's working group that prepared the aquatic portions of the 1990 Integrated Assessment (IA), NAPAP's final policy document for Congress.
 Drafted major portions of the IA; participated in a series of assessment meetings attended by federal, national laboratory and industry scientists, economists, and policy specialists; provided input on all aquatics sections of the final document. Also authored the aquatic sections of NAPAP's 1996 Report to Congress.
- Served as project manager for the Tillamook Bay National Estuary Project for several
 water quality monitoring projects to evaluate the concentrations and loads of
 nutrients, sediment, and fecal coliform bacteria in the five rivers that flow into
 Tillamook Bay, Oregon. These projects include long-term monitoring, storm
 monitoring, source area identification, and evaluation of the relationships between
 land use and water quality.
- Served as project manager for E&S's role in the construction and management of a
 diatom paleoclimate data cooperative for North and South America. The data
 cooperative brought together paleolimnological data from a multitude of sources that
 can be used to reconstruct aspects of historical regional climates from diatom remains
 in dated lake sediment cores.

AWARDS AND HONORS

Academic scholarship, Stonehill College, 1968-72 Massachusetts State Scholarship, 1969-72 Cum laude, Stonehill College, 1972

- Postdoctoral fellowship, Royal Norwegian Council for Scientific and Industrial Research, 1984-86
- Director's Technical Contribution Award, Corvallis Environmental Research Laboratory, U.S. EPA, 1987
- Northrop Services, Inc., Best Orator, Effective Winning Presentations, 1987
- Best Scientific Paper Award, Corvallis Environmental Research Laboratory, U.S. EPA, 1988

PUBLICATIONS

Books, Special Issues

- Sullivan, T.J. 2005. Acidification chronic. In: Lehr, J.H. and J. Keeley (Eds.). Water Encyclopedia: Surface and Agricultural Water. John Wiley & Sons.
- Sullivan, T.J. 2000. Aquatic Effects of Acidic Deposition. Lewis Publ., Boca Raton, FL. 373 pp.
- Seip, H.M., L. Pawlowski, and **T.J. Sullivan** (eds.). 1994. Environmental degradation due to heavy metals and acidifying deposition A Polish-Scandinavian Workshop. Ecol. Engr. Special Issue. 3(3):205-314.
- Pawlowski, L., H.M. Seip, and **T.J. Sullivan** (eds.). 1994. Aluminum in the environment. J. Ecol. Chem. 3(3).
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- Sullivan, T.J. and C. Moersch. 1992. Radon Alert (Teacher Guides for High School Education). E&S Geographic and Information Services, Corvallis, OR. 4 vol., 368 pp.
- Sullivan, T.J. 1991. Oregon Coast Recreational Atlas. A Guide to Natural Resources and Recreational Opportunities. E&S Geographic and Information Services, Corvallis, OR. 106 pp.
- NAPAP Aquatic Effects Working Group (Multiple authors including **Sullivan, T.J.**). 1991. National Acid Precipitation Assessment Program 1990 Integrated Assessment. National Acid Precipitation Assessment Program, Washington, DC. 520 pp.
- Sullivan, T.J. 1990. Historical Changes in Surface Water Acid-Base Chemistry in Response to Acidic Deposition. State of the Science, SOS/T 11, National Acid Precipitation Assessment Program. 212 pp.

Journal Articles/Book Chapters

Sullivan, T.J., B.J. Cosby, B. Jackson, K.U. Snyder, and A.T. Herlihy. In review. Acidification and Prognosis for Future Recovery of Acid-Sensitive Streams in the Southern Blue Ridge Province.

- Sullivan, T.J., B.J. Cosby, B. Jackson, and K.U. Snyder. In review. Critical Loads of Atmospheric Sulfur Deposition for the Protection and Recovery of Acid-Sensitive Streams in the Southern Blue Ridge Province.
- Sullivan, T.J., B.J. Cosby, J.R. Webb, R.L. Dennis, A.J. Bulger, F.A. Deviney Jr. 2008. Streamwater acid-base chemistry and critical loads of atmospheric sulfur deposition in Shenandoah National Park, Virginia. Environ. Monit. Assess. 137:85-99. DOI 10:1007/s10661-007-9731-1
- Zhai, J., C. T. Driscoll, **T. J. Sullivan**, and B. J. Cosby. 2008. Regional application of the PnET-BGC model to assess historical acidification of Adirondack lakes. Water Resour. Res., 44, W01421, doi:10.1029/2006WR005532.
- McNeil, B.E., J.M. Read, **T.J. Sullivan**, T.C. McDonnell, I. J. Fernandez, and C.T. Driscoll. 2008. The spatial pattern of nitrogen cycling in the Adirondack Park, New York. Ecol. Appl. 18:438–452.
- Sullivan, T.J., B.J. Cosby, A.T. Herlihy, C.T. Driscoll, I.J. Fernandez, T.C. McDonnell, C.W. Boylen, S.A. Nierzwicki-Bauer, and K.U. Snyder. 2007. Assessment of the extent to which intensively-studied lakes are representative of the Adirondack region and response to future changes in acidic deposition. Water Air Soil Pollut. 185:279-291.
- Sullivan, T.J., J.R. Webb, K.U. Snyder, A.T. Herlihy, and B.J. Cosby. 2007. Spatial distribution of acid-sensitive and acid-impacted streams in relation to watershed features in the southern Appalachian Mountains. Water Air Soil Pollut. 182:57-71.
- McNulty, S.G., E.C. Cohen, J.A. Moore Meyers, **T.J. Sullivan**, and H. Li. 2007. Estimates of critical acid loads and exceedances for forest soils across the conterminous United States. Environ. Poll. 149(3):281-292.
- Sullivan, T.J., I.J. Fernandez, A.T. Herlihy, C.T. Driscoll, T.C. McDonnell, N.A. Nowicki, K.U. Snyder, and J.W. Sutherland. 2006. Acid-base characteristics of soils in the Adirondack Mountains, New York. Soil Sci. Soc. Amer. J. 70:141-152.
- Sullivan, T.J., M. Wustenberg, K.U. Snyder, J. Moore, D. Moore, E. Gilbert, and E. Mallery. 2006. Relationship between size of vegetated buffers and transport of fecal coliform bacteria from pasturelands treated with dairy cow manure. Abstract. J. Dairy Sci. 89 (Suppl. 1): Abstract 298.
- Sullivan, T.J., B.J. Cosby, K.A. Tonnessen, and D.W. Clow. 2005. Surface water acidification responses and critical loads of sulfur and nitrogen deposition in Loch Vale Watershed, Colorado. Water Resour. Res. 41:W01021, doi:10.1029/2004WR003414.
- Sullivan, T.J., K. U. Snyder, E. Gilbert, J.M. Bischoff, M. Wustenberg, J. A. Moore, and D. Moore. 2005. Assessment of water quality in association with land use in the Tillamook Bay Watershed, Oregon. Water Air Soil Pollut. 161:3-23.
- Sullivan, T.J., M.C. Saunders, B.L. Nash, K.A. Tonnessen, and B.J. Miller 2005. Application of a regionalized knowledge-based model for classifying the impacts of nitrogen, sulfur, and organic acids on lakewater chemistry. Knowledge Based Systems. 18(1):55-68.

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Saunders, M.C., T.J. Sullivan, B.L. Nash, K.A. Tonnessen, and B.J. Miller. 2005. A knowledge-

based approach for classifying lake water chemistry. Knowledge Based Systems. 18(1):

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 Relationship between landscape characteristics, history, and lakewater acidification in the Adirondack Mountains, New York. Water Air Soil Pollut. 112:407-427.
- Sullivan, T.J. and B.J. Cosby. 1998. Modeling the Concentration of Aluminum in Surface Waters. Water Air Soil Pollut. 105:643-659.
- Sinha, R., M.J. Small, P.F. Ryan, **T.J. Sullivan**, and B.J. Cosby. 1998. Reduced-form modeling of surface water and soil chemistry for the Tracking and Analysis Framework. Water Air Soil Pollut. 105:617-642.
- Sullivan, T.J. 1997. Ecosystem manipulation experimentation as a means of testing a biogeochemical model. Environ. Mgmt. 21(1):15-21.
- Sullivan, T.J., J.M. Eilers, B.J. Cosby, and K.B. Vaché. 1997. Increasing role of nitrogen in the acidification of surface waters in the Adirondack Mountains, New York. Water Air Soil Pollut. 95:313-336.
- Bernert, J.A., J.M. Eilers, **T.J. Sullivan**, K.E. Freemark, and C. Ribic. 1997. A quantitative method for delineating regions: an example for the Western Corn Belt Plains Ecoregion of the USA. Environ. Mgmt. 21:405-420.
- Sullivan, T.J., B.J. Cosby, C.T. Driscoll, D.F. Charles, and H.F. Hemond. 1996. Influence of organic acids on model projections of lake acidification. Water Air Soil Pollut. 91:271-282.
- Sullivan, T.J., B. McMartin, and D.F. Charles. 1996. Re-examination of the role of landscape change in the acidification of lakes in the Adirondack Mountains, New York. Sci. Total Environ. 183(3):231-248.
- Sullivan, T.J. and B.J. Cosby. 1995. Testing, improvement, and confirmation of a watershed model of acid-base chemistry. Water Air Soil Pollut. 85:2607-2612.
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 Multi-site testing and evaluations of a geochemical model of acid-base chemistry: confirmation of the MAGIC model using catchment manipulation experiments and historical diatom inferences. In Jenkins, A., R.C. Ferrier, and C. Kirby. Ecosystem Manipulation Experiments: Scientific Approaches, Experimental Design, and Relevant Results. Ecosystems Research Report No. 20. ECSC-EC-EAEC, Brussels. pp. 360-365.
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- Sullivan, T.J., D.L. Kugler, M.J. Small, C.B. Johnson, D.H. Landers, B.J. Rosenbaum, W.S. Overton, W.A. Kretser, and J. Gallagher. 1990. Variation in Adirondack, New York, lakewater chemistry as a function of surface area. Water Resour. Bull. 26:167-176.
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- Sullivan, T.J., C.T. Driscoll, S.A. Gherini, R.K. Munson, R.B. Cook, D.F. Charles, and C.P. Yatsko. 1989. The influence of organic acid anions and aqueous aluminum on measurements of acid neutralizing capacity in surface waters. Nature 338:408-410.
- Sullivan, T.J., J.M. Eilers, M.R. Church, D.J. Blick, K.N. Eshleman, D.H. Landers, and M.S. DeHaan. 1988. Atmospheric wet sulfate deposition and lakewater chemistry. Nature 331:607-609.
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- Sullivan, T.J., N. Christophersen, I.P. Muniz, H.M. Seip and P.D. Sullivan. 1986. Aqueous aluminum chemistry response to episodic increases in discharge. Nature 323:324-327.
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- Sullivan, T.J. and M.C. Mix. 1983. A simple and inexpensive method for measuring integrated light energy. Environ. Sci. Technol. 17:127-128.
- Sullivan, T.J. 1982. Avian species diversity: Its relation to the competition hypothesis. Proc. Oregon Acad. Sci. 18:10-20

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Reports

- Sullivan, T.J., B.J. Cosby, K.U. Snyder, A.T. Herlihy, B. Jackson. 2007. Model-Based Assessment of the Effects of Acidic Deposition on Sensitive Watershed Resources in the National Forests of North Carolina, Tennessee, and South Carolina. Final report prepared for USDA Forest Service, Asheville, NC. E&S Environmental Chemistry, Inc., Corvallis, OR.
- Sullivan, T.J., A.T. Herlihy. 2007. Air Quality Related Values and Development of Associated Protocols for Evaluation of the Effects of Atmospheric Deposition on Aquatic and Terrestrial Resources on Forest Service Lands. Final report prepared for the U.S.D.A Forest Service.
- Sullivan, T.J. 2007. What's up with the Air? Shenandoah National Park. National Park Service, Luray, VA.
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- Snyder, K., T. Sullivan, D. Moore, and R. Raymond. 2006. Middle Umpqua River Watershed Assessment. Prepared for the Umpqua Basin Watershed Council. E&S Environmental Chemistry, Inc., Corvallis, OR.
- Snyder, K., T. Sullivan, D. Moore, and R. Raymond. 2006. Upper Umpqua River Watershed Assessment. Prepared for the Umpqua Basin Watershed Council. E&S Environmental Chemistry, Inc., Corvallis, OR.
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- Snyder, K.U., **T.J. Sullivan**, R.B. Raymond, E. Gilbert, and D. Moore. 2002. Necanicum River Watershed Assessment. E&S Environmental Chemistry, Inc., Corvallis, OR.
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